

**UNCLASSIFIED**

**AD 401 567**

**DEFENSE DOCUMENTATION CENTER**

**FOR**

**SCIENTIFIC AND TECHNICAL INFORMATION**

**CAMERON STATION, ALEXANDRIA, VIRGINIA**



**UNCLASSIFIED**

NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

401 567

⑤ 17511

2

41191

S/O33/62/039/005/004/011  
E032/E314STEP  
3,1730

AUTHORS: ⑧ Lozinskaya, T.A. and Kardashev, N.S.

TITLE: ⑥ Deformation of the gaseous disc of the galaxy

PERIODICAL: ⑬ Astronomicheskiy zhurnal, v. 39, 5, 1962,

pp. 840 - 848

TEXT: F. Kahn and L. Woltjer (Astrophys. J., 130, 705, 1959) have suggested a systematic deformation in the distribution of interstellar hydrogen which is due to the effect of the intergalactic medium on the galactic halo. It is therefore of interest to investigate the hydrogen distribution in the galaxy. This was done between August, 1960 and 1961, at Krymskaya stantsiya FIAN (Crimean Station of FIAN) using the 21-cm radiotelescope described by B.M. Chikhachev and R.L. Sorochenko (Tr. 5-go Soveshchaniya po vopr. kosm. (Proceedings of the 5-th Conference on Cosmological Problems).

The antenna was in the form of a paraboloid with a half-power beam-width of 45' x 113'. The frequency-modulated receiver had a noise factor of about 4, a bandwidth of about 20 kc/s and a time constant of 50 sec. Fig. 3 shows the distribution of Card 1/3

S/O33/62/039/005/004/011  
E032/E314

Deformation of ....

hydrogen in the galaxy as deduced from the present results. The numbers indicate the height above the galactic plane (for the circular-rotation model). Fig. 5 shows the hydrogen distribution using the data of Oort, Kerr and Westerhout (Monthly Notices Roy. Astron. Soc., 118, 379, 1958) and the present results. In this figure, all the distances were calculated by taking the K-effect into account with  $K = -2 \text{ km/sec kpc}$ . The open circles show regions of maximum hydrogen concentration (Genkin's model). The overall conclusion is that Genkin's model (Astron. zh., 38, no. 5, 1961) is a reasonable first-order approximation to the observed distributions. The most probable explanation of the observed deformation of the gaseous disc is that due to Kahn and Woltjer (Astrophys. J., 130, 705, 1959). There are 5 figures and 2 tables.

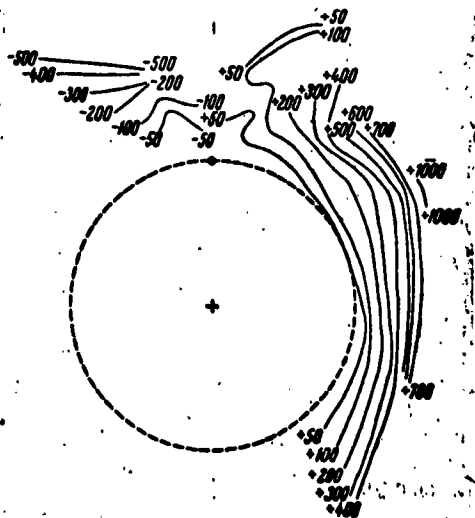
ASSOCIATION: Gos. astronomicheskiy in-t im. P.K. Shternberga  
(State Astronomical Institute im. P.K. Shternberg)

SUBMITTED: August 11, 1961

Card 2/3

Deformation of ....

Fig. 3:



Card 3/3

S/033/62/039/005/004/011  
E032/E314

Fig. 5:

